AI Planning
Exercise Sheet 4

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Students: Axel Perschmann, Tarek Saier

Exercise 4.1

For easy readability let the tiles be referred to as b_1, b_2, w_1 and w_2 and the empty cell be referred to as e. Furthermore, let the actions move and jump be denoted as $m_c(t)$ and $j_c(t)$ respectively where c is the destination cell$\in \{1, 2, 3, 4, 5\}$ and t is the tile that is being relocated.
As an example, the initial state is:
b_1, b_2, w_1, w_2, e
If we then apply $j_5(b_2)$ we reach:
b_1, e, w_1, w_2, b_2

(a) Let $\lceil a \rceil$ be the search node σ reached by applying the action $a \in \{m_c(t), j_c(t)\}$.
$f(\lceil m_5(w_2) \rceil) = 1 + 4 = 5$
$f(\lceil j_5(w_1) \rceil) = 1 + 4 = 5$
$f(\lceil j_5(b_2) \rceil) = 2 + 2 = 4$
Apply $j_5(b_2)$ which results in:
b_1, e, w_1, w_2, b_2

(b)

Exercise 4.2

bar